

Before the  
**FEDERAL COMMUNICATIONS COMMISSION**  
Washington, D.C. 20554

<b>In the Matter of</b>	)	
	)	
<b>Establishment of a Comprehensive Rural Broadband Strategy</b>	)	<b>GN Docket No. 09-29</b>
	)	
<b>To: Competition Policy Division Wireline Competition Bureau</b>		
<b>Via: Office of the Secretary</b>		

**COMMENTS OF ARRL, THE NATIONAL ASSOCIATION  
FOR AMATEUR RADIO**

ARRL, the national association for Amateur Radio, formally known as the American Radio Relay League, Incorporated (ARRL), by counsel and pursuant to the Public Notice, DA 09-561, released March 10, 2009, hereby respectfully submits its comments with respect to the establishment of a comprehensive rural broadband strategy. The Public Notice seeks comments in the course of the Commission's implementation (in consultation with the Department of Agriculture) of the Food, Conservation and Energy Act of 2008,<sup>1</sup> commonly known as the "2008 Farm Bill." In the interests of the Amateur Radio Service in the avoidance of interference to emergency and public service communications provided by licensed Amateur Radio operators, ARRL states as follows:

1. ARRL is most supportive of the improvement of rural broadband opportunities. Amateur Radio operators integrate broadband in their avocational, public service activities and in their radio station configurations, and benefit greatly from it. Rural broadband availability is well behind broadband rollout in urban and suburban environments. ARRL is in agreement that broadband is critical to the health of

---

<sup>1</sup> Public Law 110-246, 122 Stat. 1651 (June 18, 2008).

agricultural and other businesses, and to the educational interests of Americans who live in rural areas. The Commission is properly looking, *inter alia*, for short and longer term solutions for rapid broadband rollout in rural areas, and to identify how Federal agency programs might overcome obstacles that currently impede rural broadband deployment.

2. Since 2003, when the Commission began consideration of regulation of Broadband Over Power Line (BPL) systems<sup>2</sup> (a deployment of older, power line carrier system technology), the Commission (and the utilities industry) has repeatedly touted BPL as a promising means of providing rural broadband service. Though BPL as a rural broadband delivery mechanism has inherent, and ARRL would argue prohibitive limitations (notable among these being the large number, and the cost, of repeaters and couplers required on overhead, medium voltage power lines for what amounts to a limited number of subscribers' homes in rural areas),<sup>3</sup> Commissioners have, even recently, continued to mention BPL as a competitive broadband opportunity in rural areas.<sup>4</sup>

---

<sup>2</sup> See ET Dockets 03-104 and 04-37.

<sup>3</sup> BPL uses medium voltage power lines (i.e. those that run between a power substation and the transformers that feed power to individual homes) to deliver broadband signals. BPL systems generally use radio frequencies between 1.7 and 80 MHz. The radio frequency energy is not intended to radiate from the power lines. However, because they are not shielded, radiation inevitably occurs. In addition to causing interference to nearby radio receivers tuned to the frequencies used by the BPL system, it also causes BPL signal losses, requiring that the BPL signal be repeated every few thousand feet along the power line – which makes BPL systems uneconomic in rural areas. Other methods of delivering broadband connectivity appear to ARRL to have much greater promise for rural areas; wireless and satellite broadband in particular are far more promising.

<sup>4</sup> It is not readily apparent that BPL was ever considered in the marketplace as a viable, practical technology for rural broadband service. In joint comments to the Commission in Docket 04-37, the National Rural Telecommunications Cooperative and National Rural Electric Cooperative Association observed, “To date, no BPL system has been demonstrated to work, much less been commercially deployed, on a long, sparsely populated rural electric power line.” Despite their keen interest in offering broadband services, the two organizations cautioned that “BPL technology may not be a viable broadband alternative for rural Americans in the near future.” These remarks, though made several years ago, were prescient, and continue to be accurate today. Most BPL providers have in any case apparently shifted their focus from broadband delivery to power grid management applications.

3. To the extent that BPL could ever be considered in the long term as a potential source of rural broadband, there are two obstacles that will have to be removed first. Both relate to the interference potential of BPL. The Commission's rules regarding BPL, adopted in ET Docket 04-37,<sup>5</sup> include the requirement that BPL systems not cause harmful interference to licensed radio services. However, experience has shown that those systems do in fact cause harmful interference to licensed radio services in certain configurations. The radio services that use this frequency range include international broadcasting, aeronautical, maritime, disaster relief, military, and amateur. Of particular concern in rural areas is that low-band VHF radio systems are still common among State police, volunteer fire departments, and other "First Responder" public safety agencies. BPL systems using this frequency range can and would, without additional rules, likely block communications between dispatch centers and emergency response vehicles. Amateur radio, being a continuous, intensive user of the high-frequency bands in residential areas, is arguably the most pervasively affected. Amateur mobile operation is a particularly notable victim of BPL interference, since medium-voltage power lines run parallel to rural roadways. The Commission's BPL rules include no effective protection for Amateur mobile operation.

4. ARRL and representatives of the Broadcast industry challenged the adequacy of the Commission's BPL interference rules. On appeal to the United States Court of Appeals for the District of Columbia Circuit, [See, *American Radio Relay League, Inc. v. FCC*, No. 06-1343, 524 F.3d 227 (D.C. Cir. 2008)], the Court remanded the ET Docket 04-37 proceeding to the Commission with some very specific instructions, including

---

<sup>5</sup> The Commission's 2004 BPL rules (47 C.F.R. § 15.601, *et seq.*) were adopted in *Amendment of Part 15 Regarding New Requirements and Measurement Guidelines for Access Broadband Over Power Line Systems, Carrier Current Systems* 19 FCC Rcd. 21,265 (October 28, 2004).

reconsideration of assumptions relating to interference mitigation and disclosure of studies that had previously only been released in redacted form. To date, almost a year later, literally nothing has been done by the Commission to comply with the Court's mandated instructions. Over the six-year duration of the Commission's docket proceedings concerning BPL rules, there has been continuous and extensive debate about the interference potential of BPL. This created some uncertainty among utilities, municipalities and others about BPL as a broadband delivery mechanism. The Commission's inaction since the Court's remand has continued this regulatory uncertainty, which is an inhibiting factor that has inevitably had a dampening effect on the marketplace's interest in BPL as a broadband delivery mechanism. Before the marketplace can consider BPL as a rural broadband source, this regulatory uncertainty would have to be resolved.

5. Related to this, any consideration of BPL as a rural broadband provider must factor in the cost of interference resolution. From the perspective of the Amateur Radio Service (and other licensed radio services), there are still no rules in place which adequately protect licensees from interference from BPL systems. While there are configurations of BPL systems which can adequately reduce the probability of interference *ex ante* and without significant constraints on BPL deployment, the current BPL rules do not mandate the use of these interference prevention mechanisms. The Commission has an opportunity to craft revised BPL rules which address the *actual* interference potential of BPL systems while still enabling BPL as a broadband delivery (or grid management) technology. ARRL, some eight months ago, offered a plan to the

Commission's Office of Engineering and Technology in this regard.<sup>6</sup> The revised regulations suggested by ARRL would be sufficient to reduce the potential interference from BPL to the point that it would be practical to address such instances on a case-by-case basis. Compliance is achievable with present BPL technology without significant limitations on BPL deployment, rural or otherwise. However, the absence of such rules is an obstacle to any consideration of BPL as a rural broadband mechanism and makes an evaluation of interference mitigation difficult or impossible.

6. The need and willingness to utilize agency resources to remove interference concerns as an obstacle to rural broadband rollout (at least via BPL) was recognized more than four years ago by the Rural Utilities Service (RUS) of the United States Department of Agriculture. Attached hereto as Exhibit A is a letter dated January 28, 2005, addressed to the ARRL's Chief Executive Officer on behalf of Hilda Gay Legg, then Administrator of the RUS. The letter was issued in response to an ARRL communication regarding BPL and the possible funding of BPL systems via the RUS' *Community Connect* Grant Program. The RUS acknowledged that the cost of interference mitigation from BPL systems was a "significant" issue. It represented to ARRL that, whenever a loan or grant application proposes broadband service delivery via BPL, the RUS will "consider the cost of interference mitigation in [its] financial analysis." If the means by which a grantee would comply with Commission requirements for interference avoidance are not clear (which as of now they are not), it is unlikely that any applicant for a grant for broadband service using BPL could address the RUS' concern about interference. It is necessary, therefore, for the Commission to address the BPL interference issues on remand from the

---

<sup>6</sup> See, Notice of Oral *Ex Parte* Statement of ARRL in ET Docket 04-37 dated July 9, 2008, and the attachment thereto.

Court of Appeals in order to remove this additional obstacle to an assessment of rural broadband opportunities via BPL.

7. Finally, ARRL is constrained to note that the Commission has, over the past six years acted not as a dispassionate technical agency in the evaluation of certain broadband mechanisms, including BPL. Instead, it has acted as a self-described “cheerleader” for certain technologies, also including BPL. In doing so, the Commission in the past has ignored technical evidence that is contrary to its predisposition. ARRL urges that those same past mistakes not be repeated in this proceeding. The Obama Administration, on Inauguration Day this year, placed a series of goals on the White House web site. Among these was the following, obviously laudable goal: “**Restore Scientific Integrity to the White House:** *Restore the basic principle that government decisions should be based on the best-available, scientifically-valid evidence and not on ideological predispositions.*” The Commission has the opportunity to itself implement this goal in this Docket proceeding. Rural broadband opportunities should be evaluated in terms of the scientific realities of the technologies on the table, and not on the basis of what the Commission wants to believe about them.

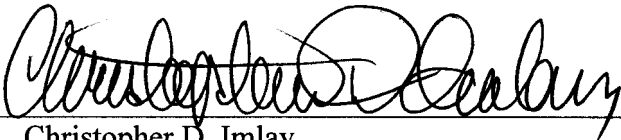
Therefore, the foregoing considered, ARRL, the national association for Amateur Radio respectfully requests that the Commission fulfill without further delay the obligations placed upon it by the United States Court of Appeals in ET Docket 04-37, and adopt such revised and additional rules for BPL so as to eliminate the extant interference potential of that technology. Inasmuch as the regulatory uncertainty and the unresolved interference issues which continue to surround BPL stand as an obstacle to any complete

evaluation of rural broadband opportunities and to the development of a rural broadband plan, the resolution of ET Docket 04-37 is a prerequisite for the development of that plan.

Respectfully submitted,

**ARRL, the National Association For Amateur Radio**

225 Main Street  
Newington, CT 06111-1494

By:   
Christopher D. Imlay  
Its General Counsel

Booth, Freret, Imlay & Tepper, P.C.  
14356 Cape May Road  
Silver Spring, MD 20904-6011  
(301) 384-5525

March 25, 2009



United States Department of Agriculture  
Rural Development

EXHIBIT A

05 FEB -1 AM 10:29

JAN 28 2005

Mr. David Sumner  
Chief Executive Officer  
American Radio Relay League  
225 Main Street  
Newington, CT 06111-1494

Dear Mr. Sumner:

This is in response to your September 13, 2004, letter concerning the Rural Utilities Service (RUS) Community Connect Grant Program. In particular, you offered comment regarding the use of Broadband over Power Line (BPL) in our grant program.

Ed Cameron, Director of our Advanced Services Division, which administered these grants, called you and discussed your concerns in October. Therefore, you know that no grant applicants proposed BPL technology, and that RUS is aware of the Federal Communications Commission's (FCC) interference mitigation requirements for BPL.

In addition to the Community Connect Grant Program, we administer the Broadband Loan Program, and our electric cooperatives are prime candidates for offering BPL services to their members with or without RUS broadband program funding. I have distributed your report on BPL in Cedar Rapids, IA to our Telecommunications and Electric Program offices.

Your comment that mitigation of BPL interference could be costly is significant to us. Whenever a loan or grant application proposes broadband service delivery via BPL, we will consider the cost of interference mitigation in our financial analysis. Since we require those who borrow and receive grants from us to comply with all FCC requirements, BPL projects we fund will have to comply with the BPL usage conditions adopted on October 14, 2004.

Thank you for bringing this matter to our attention. If you have additional thoughts on BPL, please direct them to Ed Cameron at 202-690-4493.

Sincerely,

FOR Hilda Gay Legg  
Administrator  
Rural Utilities Service

1400 Independence Avenue, SW, Washington, DC 20250  
Web: <http://www.rurdev.usda.gov>

Committed to the future of rural communities.

"USDA is an equal opportunity provider, employer and lender."

To file a complaint of discrimination write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14<sup>th</sup> and Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice or TDD).